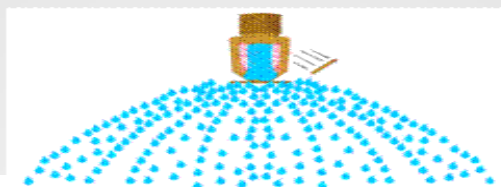


NFPA
Fire Sprinkler Initiative
MANUFACTURED HOUSING CONSENSUS
COMMITTEE
October 2011



FIRE SPRINKLER INITIATIVE
Bringing Safety Home



The Fire Sprinkler Initiative is a project of
the National Fire Protection Association.

NFPA: Home Fire Sprinklers

Objectives:

- Overview of home fire problem
- Historical perspective
- Overview of NFPA 13D – 2010 Edition Update
- Challenges facing home fire sprinklers
- Dispelling myths and opponent arguments
- National perspective
- Educational tools



NFPA-Home Fire Sprinklers

Fire deaths and injuries in one and two-family homes* (% of residential)

- 73% or 279,000 residential fires in 2010 (+2.4% 2009)
- 83% of fire deaths - 2,200 (+4.8% 2009)
- 68% of fire injuries - 9,400
- 83% of fire property damage - \$5.9 B
- 75% of fireground firefighter deaths-2010

*2011 NFPA

NFPA-Home Fire Sprinklers

Who is at the highest risk?

- Children under 5
- Adults over 65
- Persons with disabilities
- **Groups that may not be able to exit on their own even with working smoke alarms!**



Catastrophic Multiple-Death Fires in 2010

**Five, or One-quarter, of
the catastrophic
multiple-death home
fires in 2010 occurred in
manufactured housing.**

2010 Multiple-Death Fires in Manufactured Homes

CALIFORNIA

Date, Time of Alarm, Number of Deaths

January, 5:15 a.m., 5

Number of Stories, Occupancy Type, Construction Type

This single-family, single-wide manufactured home had an addition that contained a bedroom.

Smoke Alarm and Other Protection Devices

Neither smoke alarms nor suppression equipment were present.

Fire Origin and Path

The fire started in the bedroom in home's addition. The cause was undetermined.

Contributing Factors and Victim Locations

These were not reported.

2010 Multiple-Death Fires in Manufactured Homes

ALABAMA

Date, Time of Alarm, Number of Deaths

March, 12:15 a.m., 5 (1 under age 6)

Number of Stories, Occupancy Type, Construction Type

Single-family manufactured home.

Smoke Alarm and Other Protection Devices

No information was reported.

Fire Origin and Path

No information was reported.

Contributing Factors and Victim Locations

No information was reported.

2010 Multiple-Death Fires in Manufactured Homes

KENTUCKY

Date, Time of Alarm, Number of Deaths

April, 2 a.m., 5 (3 under age 6)

Number of Stories, Occupancy Type, Construction Type

Single-family manufactured home.

Smoke Alarm and Other Protection Devices

No information was reported.

Fire Origin and Path

No information was reported.

Contributing Factors and Victim Locations

Seven people were also injured.

2010 Multiple-Death Fires in Manufactured Homes

IDAHO

Date, Time of Alarm, Number of Deaths

June, 4:02 a.m., 5 (1 under age 6)

Number of Stories, Occupancy Type, Construction Type

This single-family manufactured home was occupied by a family of two adults and three children.

Smoke Alarm and Other Protection Devices

Neither smoke alarms nor automatic suppression equipment were present.

Fire Origin and Path

The fire began on the porch when a can of discarded cigarette butts ignited the wooden decking. The fire spread into the house and to two vehicles parked outside.

Contributing Factors and Victim Locations

All five victims were found in a rear bedroom

2010 Multiple-Death Fires in Manufactured Homes

TENNESSEE

Date, Time of Alarm, Number of Deaths

September, 2:38 a.m., 5 (2 under age 6)

Number of Stories, Occupancy Type, Construction Type

Single-family, double-wide manufactured home.

Smoke Alarm and Other Protection Devices

Neither smoke alarms nor automatic suppression equipment were present.

Fire Origin and Path

The cause and origin of this fire is undetermined.

Contributing Factors and Victim Locations

When the fire department arrived, the house was 50 percent involved in fire. Firefighters made three attempts to rescue the trapped occupants, but they were forced into a defensive attack as conditions worsened. One other person was injured.

NFPA: Home Fire Sprinklers

Historical perspective:

1973 – America Burning Report

1975 – NFPA 13D Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes is first issued

1996 – The Home Fire Sprinkler Coalition is formed

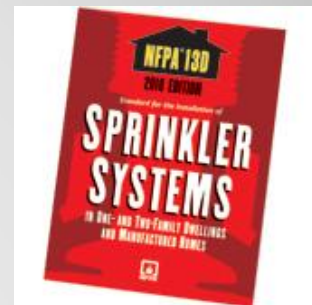
2005 – NFPA 1 Fire Code, NFPA 101 Life Safety Code, and NFPA 5000 Building Construction and Safety Code all require fire sprinklers in new one- and two-family dwellings

2009 – NFPA launches the Home Fire Sprinkler Initiative: Bringing Safety Home

NFPA-Home Fire Sprinklers

NFPA 13D: Overview

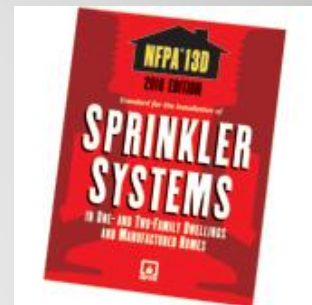
- Life safety systems
- Required only in living areas
- Omitted from:
 - closets (<24 sq. ft.)
 - bathrooms (<55 sq. ft.)
 - garages and attics



NFPA 13D - Overview

NFPA 13D: Purpose

“shall be expected to prevent flashover (total involvement) in the room of origin, where sprinklered, and to improve the chance of occupants to escape or be evacuated.”



Chapter 4–General Requirements

4.2 – Maintenance

4.1.1 Installer shall provide instructions

New A.4.1.1 (Mostly about common sense)

- Monthly inspection of valves and tanks
- Monthly testing of pumps
- Semi-annual testing of water flow devices
- Ongoing visual inspection of components
- Issues regarding painting

Chapter 6 - Water Supply

6.1 General Provisions

6.1.1 At least one automatic water supply

6.1.2 Stored water shall equal the demand rate times 10 minutes

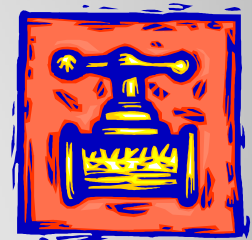
6.1.3 Demand rate of 7 minutes

- One story in height, less than 2000 ft in area

Chapter 6 - Water Supply

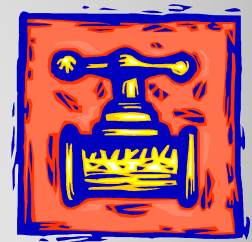
6.2 Water Supply Sources

1. Water works system
 - Standard operating pressure
2. An elevated tank
3. A pressure tank
4. Stored water with automatic pump
5. A well with a pump



Chapter 6 - Water Supply

A well with a pump of sufficient capacity and pressure to meet the sprinkler system demand. The stored water requirement of 6.1.2 or 6.1.3 shall be permitted to be a combination of the water in the well (including the refill rate) plus the water in the holding tank if such tank can supply the sprinkler system



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Opponent arguments:

- Too expensive
- Will negatively impact housing
- New houses don't burn
- Smoke alarms are enough
- Should be a matter of choice
- Water issues horror stories
- Insurance won't cover water damage

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Fire Protection Research Foundation Home Fire Sprinkler Cost Assessment

Opponents argument:

- Sprinklers are expensive



THE FACTS:

- Average cost per sprinkler SF is \$1.61
- When incentives are added cost is \$1.49

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Fire Protection Research Foundation Incentives for the Use of Residential Fire Sprinklers Systems



Opponents argument:

- High financial impact/not cost effective

THE FACTS:

- Typical incentives to home builders offset 33% of system cost

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Opponents argument:

- Smoke alarms are enough

THE FACTS:

- Smoke alarms have done a good job in reducing home fire deaths
- Manufactured homes are less likely to have smoke alarms despite requirements
- Over 37% of people who died did so in homes with working smoke alarms*

*NFPA 2008

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Opponents argument:

- Home fire incidents, injuries and death continue to decline without the installation of fire sprinklers.

THE FACTS:

- Have we solved the fire death and injury problem?

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Opponents argument:

- Chances of survival is 99.41% if you have working smoke alarms.

THE FACTS:

- 3,000 U.S. home fire deaths in 400,000 reported home fires.
- Likelihood of survival is more than 99% without the presence of smoke alarms or any other fire safety provisions.

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Opponents argument:

Demand is not there. Should be a matter of choice

THE FACTS:

- Belief of "it won't happen to me" -- until it does
- Fire impacts the entire community
- Whose responsibility is it?
- What about liability – constructive knowledge?

Comparative Analysis of Housing Cost and Supply

Key findings:

- No reduction in number of housing
- Relative increase in construction
- Analysis did not reveal any detrimental effects
- Minor influence compared to other factors



Integration of Sprinklers with Water Supply Systems

Key findings:

- Majority did not experience meter cost increase
- 90% experienced no increase on service fees
- Domestic water consumption rates did not increase
- Majority did not see an increase in tapping fees





NFPA-Home Fire Sprinklers Insurance



PREMIUM DISCOUNTS

The standard ISO Dwelling Fire and Homeowners Programs contain available premium Credits for installation of fire sprinkler protection up to a maximum of:

- **13% for full sprinkler protection that includes all areas of a home, including attics, bathrooms, closets, and attached structures;**
- **8% for fire sprinkler protection of all areas of a home excluding the attic, bathrooms, closets, and attached structures as long as fire detection equipment is installed in those areas where sprinklers are omitted;**

Individual insurer programs may provide different credits.

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HFSC/FM Global



The Environmental Impact of Automatic Fire Sprinklers

Conclusions:

Fire Sprinklers Are Green!

- Reduce green house gases by 98%
- Reduce fire damage by up to 97%
- Reduce water usage to fight a home fire by upwards of 90%
- Reduce the amount of water pollution released into the environment
- Reduce debris to landfills



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Educational Resources:

Home Fire Sprinkler Coalition (HFSC)

- Animated Fire Timeline
- How a Sprinkler Works Animation
- Water Usage comparison Animation
- Fire Sprinkler System Facts
- Municipal Reports
- Educational Material
- The Solution Newsletter
- Media Resources



<http://homefiresprinkler.org>

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Summary

- Cause profile resembles other one- and two-family homes
- Manufactured home occupants often have other risk factors
 - Household below poverty line
 - Someone at least 65 years of age
 - No HS diploma
 - American Housing Survey 2007
- The case for fire sprinklers is as strong for manufactured homes as it is for other one- and two-family homes

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Questions?



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